Original/Duplicate/Triplicate
CONTRACT CERTIFICATE

SBRNO-9/16-17

No. ***First & Final*** (For Other Works) Date 30-4-2016

Division: **BBMP, Byatarayanapura** Sub-Division: **BBMP, Vidyaranyapura**

Bill Received No. 49 Dated 26.4.16 Divisional Cash Book Voucher No..... Dated.....

Sub Divisional **Work Code: 011-16-000021**

Schedule Docket No. Head of Account: **P1771** **Est.Cost: 20.00 Lakhs** D.R.No. :

Name of Work (as per sanctioned estimate: **Providing and Instalation Water Purification Unit at MS Palya Surrounding Area in Ward No. 11 (Kuvempunagara), Vidyaranyapura Sub Division.**

Name of Contractor and Full Address: ***Sri. Gopi Reddy, Contractor, # 3, 1st Cross, 1st Main, Ramachandrappa Layout, Veeranna Palya, Bangalore – 560 045.***

Reference to Agreement No. **EE/BTP/BBMP/ E-PROC/03(18416)/WO/256/2015-16** Date: **26.02.2016**

Certified that the measurements were taken by me on 29/04/16 and recorded of **Pages** 209812 **to** 209852 of measurement Book No. 2099 and that the work is satisfactorily executed.

Contractor **Officer-in-charge of work**

Certified that the measurement were taken by me on 29/04/16 and found correct. The work is satisfactorily executed.

Certified that the quantities of materials shown in column 3 of Account have been actually brought to site of the work and the contractor has not previously received any advance on this security. These materials are of and imperishable nature and are all required for immediate use on the work in connection with items for finished work have been agreed upon. A normal agreement signed and executed by the contractor is recorded in the office.

Sub-Division Officer

II Memorandum of Payment

1) Total value of work done or supplies made as per account within		
2) Deduct amount to be held in reserve being .....percent Rs.....		
3) " Balance		
4) Deduct Payment:		
a. Amount of previous payment as in the Office Cash Book Voucher No.....Dated.....S.D. No..... Amount adjusted towards cash advance recovery of		
b. Payments Now made { cost store or other material supplied. recovery of amount creditable to this/other work Amount paid on this bill Cheque / Cash.		
5) Balance being unpaid value of work done held in reserve.		
6) Deduct cash advance made on the Office cash Book Voucher No..... dated.....less adjustments.		
7) Net amount due to or from Contractor unadjustments items.		
8) Advance to Contractor for materials brought to site (as detailed) within.		
9) Value of Government materials supplied.		
Total amount adjusted -		

Contractor's Signature

Received Rs..... (in words).....

.....

by cash and by adjustment of Payment as per memorandum (in final settlement of all demands)

(For use in the Office)

Witness
1.
2.

Dated Signature of Contractor

Paid by me by Cheque No.....Dated.....
Cash Rs.....
Dated.....

Stamp

Audited & Admitted for Rs. 2078540-00 and Rs. 132307-00

Accts. Suprdt.

Bystarayanapura Dn., Byatarayanapura P.O. BBMP

Executive Engineer

Initials of Officer making payment

Sl. No.		Unit
1	Geophysical investigation of site for sinking Borewell for supplying drinking water to the habitation either through the Hand pump, MWS of P.W.S.S by vertical electrical sounding by adopting Venner or Schlumberger's method including reconnaissance survey of geological formation, Gerophysical investigation of existing Ground Wate in the vicinity, its quality & acceptability of the users indicating the location of site, recommended depth of casing pipe required to seal the top unconsolidated formation including an extra depth of 1.0 meter in consolidated formation for proper seating of casing pipe, depth of drilling required to cover full depth of aquifer proposed to be tapped, probable yield and other information required including transportation of instrument and accessories to work site., engaging techinical personal and labour required etc., as per Specification and direction ,with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work	Each BW
2	Sinking borewell of 165 mm dia clear using super fast hydraulic rig of capacity 250 PSIG & above CFM & above in all strats including over burden upto 20 mts fixing of casing pipes, collars and cap with necessary cutting, throading and welding including transportation of rig and supporing vehicles, crew charges and cost of consumables etc., complete including yield testing at the final depth with a minimum working of compressor for one hour (excluding coat of casing pipes, collars and cap etc.,) ,with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work 0 to 50 m	Rmtr
3	50 to 100 m	Rmtr
4	100 to 150 m	Rmtr
5	150 to 200 m	Rmtr
6	200 to 250 m	Rmtr
7	250 to 300 m	Rmtr
8	Supply of ISI mark 175 mm nominal bore medium black ERW casing pipe of 5 mm thick black electric resistance continuous welded mild steel tube material confirming to IS 1387 / 1993 & manufactured from hot rolled steel skelp / stripes in random length of 4 to 7 mts both ends threaded confirming to IS 554 / 1985, one end fixed with a socket and the other and with a plastic protection end (including of all taxes) ,with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work	Rmtr
9	Providing 250mm dia PVC Pipe 6kg/cm as per specification and direction of the Engineer in Charge of the work	Rmtr
10	Providing and fixing 175mm Borewell Cap with clamp Set H/D,with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work	No.
11	Supply and delivery at site brand New texmo/ innoval/ Lubi/ Sabar / Atalanta/ Calamal/ make suitable for vertical installation in 150mm dia bore well comprising of single stage or multistage CF pump close coupled by measns of stainless steel coupling to suitable HP suitable speed totally enclosed and filled with pure drinking water (Wet type) squirrel cage submersible induction motor suitable for opertation of 3PH., 50 Hz, 380/440 volts AC supply fitted with required aqccessories such as suction, casing suction strainers sand guard Non return value etc. complete . The pump and motor shall form an integral unit with all the required fittings 10.00 HP 20 stage.with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work 12.50 HP 20 stage	No
12	Supplying of ISI marked galvanized mild steel tube (continously welded electric resistance welded (ERW) high frequency, induction welded (HFIW) Hot finished welded type of nominal bore given below screwed at both ends as per IS 554/1986 with latest amendments, pipes threaftes at one end and the other end protected asper specification in random lengths of 4 to 7 mtrs Confirming to IS 1239 part I/1990 with amendament 1-5 and with all its latest amendements if any. The pipes supplied should be with BIS mark etc., complete and as per the directions of the Engineer-in-charge of the work	Rmtr
13	Heavy Duty Collar 50 mm dia	Nos
14	Supplying and drawing 3 core flat PVC sheathed submersible pump cable manufactured with electrolytic grade copper with flexible copper conductor confirming to table 3 class 5 of IS:8130-1984 and virgin grade PVC insulation and sheathed suitable for working voltage upto 1100 Volts. with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work	Mtr
15	Erection of pumpset including aligning and balancing with all necessary erection materials and labour including supply and erection of one pair supporting clamps, one borewell cap. Cable clips with bolts, nuts, valves guages etc., involoved in the job (Necessary GI pipe and specials with be supplied by the board at the site free of cost) with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work	No
16	Supplying and fixing 20"x20"x2.5" polished wood board made of not less than 15mm thick plank on both sides with planks made out of not more than 2 pieces and fixing the same to the wall using tapered inverted wooden plugs screws etc., with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work	No.

Previous Measurement		Present Measurement			Total Upto Date		Remarks
Qty.	Cost	Qty.	Rate Rs. P.	Amount	Qty	Cost	
-	-	1	1900.00	1900.00	1	1900.00	
-	-	50.00	320.00	16000.00	50	16000.00	
-	-	50.00	420.00	21000.00	50	21000.00	
-	-	50.00	460.00	23000.00	50	23000.00	
-	-	50.00	490.00	24500.00	50	24500.00	
-	-	50.00	560.00	28000.00	50	28000.00	
-	-	50.00	630.00	31500.00	50	31500.00	
-	-	70.00	1500.00	105000.00	70	105000.00	
-	-	18.00	810.00	14580.00	18	14580.00	
-	-	1	100.00	100.00	1	100.00	
-	-	1	62000.00	62000.00	1	62000.00	
-	-	260.00	400.00	104000.00	260	104000.00	
-	-	44	150.00	6600.00	44	6600.00	
-	-	540.00	200.00	108000.00	540	108000.00	
-	-	1	3000.00	3000.00	1	3000.00	
-	-	1	302.00	302.00	1	302.00	

Sl. No.		Unit
17	Supplying of LTUG cable having aluminium condutor PVC insulated shethed, galvnised steel, wire / steel tap armoured cable with PVC outer sheathing 1.1 KV class.with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work	Mtr
18	Labour charges for laying of 1.1 K.V class UG cable (PWD Electrical SR-1999-2000, with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work	Mtr
19	Digging or trenching of 0.6 m x 0.5 m wide refilling the trench to the required ground level and consolidating etc., complete as per Civil SR KSRB 1-2 P-7 with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work	Mtr
20	Supplying and fixing of Class A (meaium duty) GI pipe of wall thickness not less than 3.25mm on pole/wall/drain crossing with necessary clamping arrangements for UG cable of 1.1 KV class with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work	Mtr
21	Supplying and fixing L.T. cast Iron pot head suitable for 1.1 KV class UG cable filled with necessary bituumen/insulating compound complete with terminals, clamps, bolts, nuts and washers etc.,with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work	No.
22	Supplying, fixing, wiring, earth electrode for grounding conduits, I.C cutouts and other equipments on the meter board using 40 mm dia 2.90 mm thick GI pipe 2.5 m long buried in a pit. The pit should be filled with equal propotion of solt and charocoal 150 mm alround the pipe to complete depth. The connection from the pipe to the conduit etc., is to be established through GI wire of size, as per ISI specification 7.3.3 IS 732 using 12 mm dia bolts, nuts, washers and check nuts, etc., the pipe shall have 16 throught holes of 122 mm dia, (PWD Electrical SR-1999-2000, with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work	No
23	Supplying and fixing of Porcelain fuse channel with cut out on existing wooden / panel using necessary nuts, bolts and washer etc.,with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work	No.
24	Providing and fixing in position **50mm** nominal bore gun metal non-return valve horizontal type of approved make including cost of all materials, labour and HOM of equipments with all leads complete as per specifications. with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-	No
25	Providing NP/CP waste unions conforming to ISI specifications and fixing them in position as per directions including cost of materials, fixtures and conveyance to work spot etc., complete.with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work	No
26	SSupplying and fixing 50mm dia GI X nipple with ISI mark with all lead and lift loading unloading and labour etc., complete and as per the directions of the Engineer-in-charge of the work	No
27	Supplying shunt capaitors conforming to IS 2834, 3phase 400/440 volts grade for power factor improvement of rotating machinery, Capacitor in KVAR rating Nos. 2KVAR capacity with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work	No
28	Supplying and fixing miniature circuit breakers/solaters on existing MCB distribution boards using necessary fixing materiasl wiring complete as requireds 5 to 30 amps triple pole with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work	No
29	Fabrication supplying and mounting MS box of 16 SWG suitable for floor /wall mounting, fully weather proof with provision for better heat dissipation, provided with hinged front cover, equipped with tamper proof locking arrangements, with suitable size clamps with necessary cable entry pipe with gland and box should be finished 2 coats of red oxide primer paint and finally finished with approved colour enamelled metal paint etc., complete box of 21600 sqcm with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work	Sq.C
30	Supplying and delivery at site brand new star / Essen/ Lotus/Sun-shines/Adarsh/ GK Controls best indigenous make combined energy meter - cum- control panel board unit of size 600x450 x200 mm minimum mechanically strong vermin and water proof. The unit shall have two detachable doors suitable for operation on 3 ph, 50Hz, 380/440 volts, A.C supply with spring loaded latch, locking device with a key ribs should be provided inside the door, canopy apron and louvers ventilators shall be provided. the combined energy meter cum- control panel board unit suitable for operation. The panel board shall be fabricated on single unit in the above components for suitable pumpset **10HP to 20 HP Star Delta Starter SERDED Rate** with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work	No

Previous Measurement		Present Measurement			Total Upto Date		Remarks
Qty.	Cost	Qty.	Rate Rs. P.	Amount	Qty	Cost	
-	-	30.00	160.00	4800.00	30	4800.00	
-	-	30.00	12.00	360.00	30	360.00	
-	-	25.00	85.00	2125.00	25	2125.00	
-	-	4.00	350.00	1400.00	4	1400.00	
-	-	1	280.00	280.00	1	280.00	
-	-	1	2900.00	2900.00	1	2900.00	
-	-	6	180.00	1080.00	6	1080.00	
-	-	1	1600.00	1600.00	1	1600.00	
-	-	1	230.00	230.00	1	230.00	
-	-	4	80.00	320.00	4	320.00	
-	-	1	350.00	350.00	1	350.00	
-	-	1	1600.00	1600.00	1	1600.00	
-	-	23400.00	0.40	9360.00	23400	9360.00	
-	-	1	15000.00	15000.00	1	15000.00	

Sl. No.		Unit
31	Earthwork excavation for pipeline foundation including deporiting or bank up to a depth of 50 mtrs including shiriry and statting danger lighting and using site rails and boming poles at every 100 mtrs wherever necessary as directed in th following strructure manhole with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work	Cum
32	Providing and instalation at site of works P.V.C.Pipes including cost of pipes and specials and incluidng lowring into trenches, laying true to line, level and perfect linking at joints, leak proof including jointing encasing the pipe alround to a depth Not less than 15cm with grave or selected earth avalabile from the execavation with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work 75mm Dia 6 KSC	Rmtr
33	Refilling the bumont and pipeline treanches with secleted available earthe for trench excavation including authority condition in layers from thedi including disponsary of the sunplus earth with a heavy 200 mtrswith all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work	Cum
34	Providing and fixing in position brass gate valve with C.I wheel of approved quality (screwed end) 50mm nominal bore including cost of all materials, labour and HOM of equipments with all leads complete as per specification with all lead and lift, loading, unloading and labour charges etc., complete and as per the directions of the Engineer-in-charge of the work	Each
	ROOM FOR RO PLANT	
35	Earth work excavation for foundation of buildings, culverts water supply, sanitary line and electrical conduits either in pits or in trenches 1.5m and above in width, **in Hard soil** not exceeding 1.5m, in depth including dressing the bottom and sides of pits and trenches, stacking the excavated soil clear from edges of excavation with lead upto 50m, after breaking of clods etc., complete and as per the directions of the Engineer-in-charge of the work	Cum
36	Providing and laying in position plain cement concrete of **mix 1:4:8 with OPC cement @ 180 kgs with 40mm** and down size graded granite metal coarse aggregates @ 0.85cum and fine aggregares @ 0.57 cum machine mixed, concrete laid in layers not, exceeding 15cms, thick, well compacted, in foundation and plinth, including cost of all materials, labour, HOM of machinery, curing etc., complete and as per the directions of the Engineer-in-charge of the work	Cum
37	Providing and constructing granite / trap / basalt size stone masonry in **foundation with cement mortar 1:6**, stone hammerd dressed in courses not less than 20 cms high, bond stones at two m. apart in each course including cost of materials, labour, curing etc., complete and as per the directions of the Engineer-in-charge of the work	Cum
38	Providing and constructing granite / trap / basalt size stone masonry in **basement with cement mortar 1:6**, edges of stones chistle dressed in courses not less than 15 cms high, bond stones at two m. apart in each course including cost of materials, labour, curing etc., complete and as per the directions of the Engineer-in-charge of the work	Cum
39	Filling available excavated earth (excluding rock) in sides of foundations upto plinth in layers not exceeding 20 cms. in depth, compacting each deposited layer by ramming after watering with lead upto 50 m. and lift upto 1.5 m. including cost of all labour etc., complete and as per the directions of the Engineer-in-charge of the work	Cum
40	Providing and constructing precast concrete solid blocks with compressive strength not les than 35 Kg/sqm with cement mortar 1:4 masonry (quoin, Jamb, closer blocks) with solid concrete blocks of size 40x20x20 cms conforming to I.S: 2185/1965 in superstructure including cost of materials, labour charges, scaffolding, curing etc., complete and as per the directions of the Engineer-in-charge of the work	Sqm
41	Providing and laying in position **reinforced cement concrete of design mix M20 with OPC cement @ 320 kgs, with 20mm and down size graded granite metal**, coarse aggregates @ 0.878 cum and fine aggregates @ 0.459 cum with superplastisiser @ 3lts confirming to IS 9103-1999 reaffirmed-2008 machine mixed, concrete laid in layers not exceeding 15cms thick, vibrated for all works in foundation plinth and ground floor level for roof slabs, staircase, lintels, retaining walls, walls (any thickness) including attached plasters, column, piers, abutments, pillars, posts, struts, buttresses, string or lacing courses, parapets, coping, bed blocks, anchor blocks, plain window cills, fillets etc, including cost of all materials, labour, HOM of machinery, curing, etc., complete and as per the directions of the Engineer-in-charge of the work	Cum
42	Providing **mild T.M.T. reinforcement for R.C.C** work including straightening, cutting, bending, hooking, placing in position, lapping and / or welding wherever required, tying with binding wire and anchoring to the adjoining members wherever necessary complete as per design (laps, hooks and wastage shall not be measured and paid) cost pf materials, labour, HOM of machinery etc., complete and as per the directions of the Engineer-in-charge of the work	Qtl
43	Providing and removing centering, shuttering, strutting, propping etc., and removal of form work for **vertical surface such as walls at any thickness**, including attached pilasters, buttresses, plinth and string courses cost of all materials, labour etc., complete and as per the directions of the Engineer-in-charge of the work	Sqr

Previous Measurement		Present Measurement			Total Upto Date		Remarks
Qty.	Cost	Qty.	Rate Rs. P.	Amount	Qty	Cost	
-	-	342.00	200.00	68400.00	342	68400.00	
-	-	760.00	180.00	136800.00	760	136800.00	
-	-	342.00	65.00	22230.00	342	22230.00	
-	-	25	2200.00	55000.00	25	55000.00	
-	-						
-	-	25.24	200.00	5048.00	25	5048.00	
-	-	4.47	5000.00	22350.00	4	22350.00	
-	-	4.34	4400.00	19096.00	4	19096.00	
-	-	1.95	4900.00	9555.00	2	9555.00	
-	-	25.24	130.00	3281.20	25	3281.20	
-	-	35.70	1000.00	35700.00	36	35700.00	
-	-	9.58	6300.00	60354.00	10	60354.00	
-	-	1.15	70000.00	80500.00	1	80500.00	
-	-	68.39	320.00	21884.80	68	21884.80	

Sl. No.		Unit
44	Providing 12mm thick cement plaster in single coat with cement mortar 1:3, to ceiling including rounding off corners wherever required smooth rendering, : Providing and removing scaffolding, including cost of materials labour, curing etc., complete and as per the directions of the Engineer-in-charge of the work	Sqm
45	Providing 20mm thick cement plaster in single coat with cement mortar 1:4, to stone masonry including rounding off corners wherever required smooth rendering, : Providing and removing scaffolding, including cost of materials, labour, curing etc., complete and as per the directions of the Engineer-in-charge of the work	Sqm
46	Providing lime rendering for plastering to wall and ceiling, including cost of materials, labour, curing etc., complete and as per the directions of the Engineer-in-charge of the work	Sqm
47	Providing 18mm thick cement plaster in single coat with cement mortar 1:6, to brick masonry including rounding off corners wherever required smooth rendering, providing and removing scaffolding, including cost of materials, labour, curing etc., complete and as per the directions of the Engineer-in-charge of the work	Sqm
48	Providing and applying two coats with oil bound washable distemper of approved brand and shade on wall surface including priming coat with distemper primer after thoroughly brooming the surface free from mortar drops and other foregin matter including preparing the surface even and sand paper smooth, cost of materials, labours, etc., complete and as per the directions of the Engineer-in-charge of the work	Sqm
49	Providing and finishing external walls in tow coats with water proof cement paint of approve brand and shade to give an even shade after thourghly brooming the surface to remove all dirt and losse powdered material, free from mortar dops and other foreign matter cost of materials, labours, etc., complete and as per the directions of the Engineer-in-charge of the work	Cum
50	Providing and applying enamel metal paint two coats (excluding priming coat) over new steel or other metal surface brushing to give an even shade after cleaning oil, grease, dirt and other foreign matter, including cost of materials, labour, etc., complete and as per the directions of the Engineer-in-charge of the work	Sqm
51	Providing and fixing Special make glazed Vitrified tiles (Granomite finis) of approved make, quality and colour of sized 6000x600x10mm thick fixed on existing flooring wit ha special roffe adhesive for flooring and skirting etc., complete including providing spears at required interval and removing stains etc., complete and as per the directions of the Engineer-in-charge of the work	Sqm
52	Providing and laying/fixing cement base, precast pre polished cement concrete, designer tiles 25mm thick conforming to IS 1237 heavy duty tiles for flooring reads of steps of steps and landin, laid on a bed of 12mm thick cement mortar 1:3 mis finished with flush pointing using white cement, including cost of material,s including cutting, griding the edge ti half/ful rounf wherever requires labour, curing etc., complete and as per the directions of the Engineer-in-charge of the work	Sqm
53	Providing and fixing in position in cement concrete 1:3:6 steel glazed windows and ventilators side hung/top hung fully openable as per approved drawings using Z angles of 25x33x3mm, weighing 1.419Kg/m both for outer and inner frames and central mullion section of size 25x46x3mm weighing 2.28Kg/m duly providing T section 19x19x3mm weighing 0.839 kg/m for glazing of windows not more than 34 cms. c to c including providing and fixing 4mm thick reeded glass with teakwood beading of required size, all steel section should confirm to I.S. 7452:1990, 4nos, of holdfasts of approved size section should be cut to length welded and electrically grinded subdividing frames of unit shall be tenonned and revetted into the frames electrically. All the steel surface shall be thoroughly cleaned free of rust and painted with one coat of anti-corosive paint and finishing with two coats of ready mix paint of approved colour and make including cost of materials, fixtures, labour and HOM of machinery etc., complete and as per the directions of the Engineer-in-charge of the work	Sqm
54	KSRB: 7.5 Providing and fixing pull and push type rolling shutters of approved make out of 18 guage, 75mm wide cold rolled steel laths of convex corrugation, with side guides and bottom rail, with interlocking arrangements for steel laths by means of alternate clips, suspension shaft with High tension coil type springs two numbers, mounted on specially designed pipe shaft, with bracket plates, guide channels, ball bearing arrangements, for inside & outside locking with push & operations complete Including pulling hooks, 4nos handles wit hall fittings and accessories, painted with a coat of red lead paint (without top cover) cost of materials, labour, HOM of machinery complete as per specifications. Shutter size 3mx2.8m etc., complete and as per the directions of the Engineer-in-charge of the work	Sqm
55	**Providing R.O. Plant**	
	Providing revsrse osmosis suystem to cover 2000 Liters of High TDS water per hour	
	TECHNICAL SPECIFICATIONS	
	Flow Rate:	
	Feed Water : 5000 LPH	
	Treated Water : 3000 LPH	
	Reject Water : 2000 LPH	
A	**RAW WATER PUMP**	
	Purpose:- To feed the Dual Medial filter at pressure more than 2.00 bars which is min operating pressure for filter?	
B	**SAND MEDIA FILTER**	

Previous Measurement		Present Measurement			Total Upto Date		Remarks
Qty.	Cost	Qty.	Rate Rs. P.	Amount	Qty	Cost	
	-	18.81	200.00	3762.00	19	3762.00	
-	-	33.54	260.00	8720.40	34	8720.40	
-	-	52.35	30.00	1570.50	52	1570.50	
-	-	49.77	210.00	10451.70	50	10451.70	
-	-	85.89 52.35	75.00	6441.75 3926.25	86 52.35	6441.75 3926.25	
-	-	49.77	90.00	4479.30	50	4479.30	
-	-	29.43 15.73	90.00	2648.70 1415.70	29 15.73	2648.70 1415.70	
-	-	12.41	1216.00	15090.56	12	15090.56	
-	-	4.80 3.84	1091.00	5236.80 4189.44	5 3.84	5236.80 4189.44	
-	-	1.08	3811.00	4115.88	1	4115.88	
-	-	6.30 5.78	2838.00	17879.40 16389.44	6 5.78	17879.40 16389.44	
-	-						
-	-						
-	-						
-	-						
-	-						
-	-						
-	-						
-	-						
-	-						
-	-						

Sl. No.		Unit
	Purpose:- To remove the total suspendred solids, dirt, iron and reduce silt density index which can foul the members	
C	**ACTIVATE CARBON FILTER**	
	Purpose:- To remove the total color, smell, odor from the water.	
	Media: Mixed bed sand media consisting of the following i) Gravel ii) Pebbles iii) carbon Average porosity 50 micron particulate size bed depth : 1500 mm pipelines & Accessories : Pipe of PVC 10 Bar tested pressure testing cock & pressure gauges at intlet - outlet of system	
	DOSING SYSTEM	
	Purpose : To dose anti scaling chemical to protect the scaling formation on RO Membranes	
D	**MICRON FILTER**	
	Purpose ; To remove the fine particles ip to 05 microns and reduce silt density levels to acceptable level.	
E	**HIGH PRESSURE PUMP**	
	Purpose : To feed the reverse Osmosis membrane at pressure more than the osmotic pressure taking into consideration flux rate, flow and recovery	
	RO membrane housing.	
	Purpose : To pack membrane and operate at high pressure.	
	RO MEMBRANES	
	Purpose : To remove the major part of TDS into 98% by Reverse Osmosis Membranes arranged and designed to give adequate flow the Recovery.	
	RO CLEANSING SYSTEM	
F	**ELECTRICAL PANEL**	
	Purpose : A control panel is provided as a safety measure for the pumps & other electrical items.	
	Specifications a) Complete starters, overload relays, b) Voltmeter, Ammeter, MCB's indicating lights, c) Rocker switches for Dozers, d) incomers, Auto-Manual switches.	
	INSTRUMENTATION	
	Purpose : a) Flow meter : To measure the online flow of water flowtec b) Low pressure switch : To protect RO pump from dry running c) High pressure switch : To protect RO pump from back pressure d) Pressure Gauges : For calculate AP for each unit in RO system	
	PH DOSING SYSTEM	
	Purpose to dose sodium Bi-carbonate for enhances product water SS till the pre-filteration & SS from HPP to thhe premeter line termination point NRV's pressure relief valves, wherever needed the system will be on common SS base frame supply & manufacture of complete Reverse Osmosis plant stainless steel tank (2kl) Raw water tank (5kl) with stainless steel pipe line required for plant erection.	Nos
	ELECTRIFICATION	
56	Supplying and wiring adopting loop system in existing PVC Conduit / casing capping using 1100V grade, COPPER conductor flexible multistrand FRLS PVC insulated, 2 X1.5Sq.mm Cable confirming to the GTP, with a 6Amps flush type SP control switch shall be fixed on the existing plastic sheet / gang box, the other end of the wires shall be terminated with sufficient loose length in a wood/PVC round block. complete for each outlet. GROUP A b) Medium point above 3Mtr upto 6Mtr from tapping point to out let via switch etc., complete and as per the directions of the Engineer-in-charge of the work	Poin
57	c) Long point above 6Mtr upto 10Mtr from tapping point to out let via switch	Poin
58	Supplying and flush mounting teak wooden box without front plank, made of not less than 12mm thick wood, after due groove cutting, Finishing with necessary cement plastering complete (1.6.5) 4"x4"x3" (101x101x76mm) etc., complete and as per the directions of the Engineer-in-charge of the work	Eac
59	(1.6.1) 12"x12"x3" (300x300x76mm)	Eac
60	(1.6.3)10"x7"x3" (254x178x76mm)	Eac
61	Supplying 4mm thick plastic sheet with necessary nitches for fixing switches, regulators etc., and fixing on existing wooden or metal box using N.F. screws etc., complete and as per the directions of the Engineer-in-charge of the work	SqC
62	Extra for Groove cutting in brick wall/CC floor to the suitable depth for concealing of Conduit/GI pipe and plastering, finishing upto wall surface complete. upto 50mm conduit in brick wall etc., complete and as per the directions of the Engineer-in-charge of the work	Mt
63	Supplying heavy gauge PVC Conduit Pipe 19/20 mm dia 2 mm thick with suitable size bends, metal junction boxes adhesive paste etc., by groove cutting in the wall and fixing by bracing U or J hooks and cement plastering up to the wall surface and run with 18 SWG GI fish wire run throughout the conduit wherever necessary etc., complete and as per the directions of the Engineer-in-charge of the work	Mt
64	Supplying and fixing PBBC/Bakelite straight or slant batten holder and wiring with 60w/230 volts lamps etc., complete and as per the directions of the Engineer-in-charge of the work	Eac

Previous Measurement		Present Measurement			Total Upto Date		Remarks
Qty.	Cost	Qty.	Rate Rs. P.	Amount	Qty	Cost	
-	-	1	832000	832000	1	832000	
-	-	6	245.00	1470.00	6	1470.00	
-	-	6	363.00	2178.00	6	2178.00	
-	-	30 28	68.00 1904	2040.00	30 28	2040.00 1904	
-	-	18 4	116.00 1624	2088.00	18 4	2088.00 1624	
-	-	15 5	87.00	1305.00 435	15 5	1305.00 435	
-	-	13333 5860.60	0.25	3333.25 1465.15	13333 5860.60	3333.25 1465.15	
-	-	30.00	21.00	630.00	30	630.00	
-	-	25.00	60.00	1500.00	25	1500.00	
-	-	4	88.00	352.00	4	352.00	

Sl. No.		Unit
65	Supplying patti type fluorescent tube light fitting of 2' - suitable for 14 watts fluorescent tube fitting, made out of M.S. Sheet and stove enameled with HF Electronic Ballast , locking type brass contact holders mounted on doubl fold type sheet base fully wired for use on 230 volts AC . Supply including T5 lamp etc., complete and as per the directions of the Engineer-in-charge of the work	Each
66	Wiring for lighting/power circuit using one of FRLS PVC insulated 1100V grade, multistrand Copper with low conductor resistance single core wire in open or concealed system of wiring with specified IS-694:1990 & confirming to GTP of GROUP -A 1.5 sqmm etc., complete and as per the directions of the Engineer-in-charge of the work	Mtr
67	Supplying and fixing cast Aluminum round or oblong type bulk head fitting with GI wire guard, glass cover with 60/100 watts 230V GLS lamp etc., complete and as per the directions of the Engineer-in-charge of the work	Each
68	Supplying, fixing, wiring, earth electrode for grounding conduits, I.C. cutouts and other equipment's on the meter board using 40mm dia 2.90mm thick GI pipe 2.5 mtr long buried in a pit ... The pit should be filled with equal proportion of salt and charcoal 150mm all-round the pipe to complete depth. The connection from the pipe to the conduit etc., is to be established through GI wire of size as per ISI specification 7.3.3. of IS 732 using 12mm dia bolts, nuts, washers and check nuts etc., the pipe shall have 16 through holes of 122 mm dia etc., complete and as per the directions of the Engineer-in-charge of the work	No
69	Supplying of 1.1 KV LT UG cable having aluminum conductor PVC insulated, extruded inner sheathed, galvanized, steel strip (except 2CX10Sq.mm wire armoured) confirming to IS-3975:1990 (No. of Strip indicated in GTP) & extruded PVC outer sheathed armoured cable with specified IS-1554 Part-1:1988 & confirming to GTP of GROUP-A etc., complete and as per the directions of the Engineer-in-charge of the work	Mtr
70	Labour charges for laying of 1.1 KV class UG cable in existing trench GI pipe / stoneware pipe / on wall / on pole as required.In existing trench/duct etc., complete and as per the directions of the Engineer-in-charge of the work	Mtr
71	Digging of trench of 0.6m deep x 0.50 mtr wide refilling the trench to the required ground level and consolidating etc., complete For Cutting Road Surface etc., complete and as per the directions of the Engineer-in-charge of the work	Mtr
72	Supplying and fixing of class A (medium duty) GI pipe of wall thickness not less than 3.25mm on pole/wall/drain crossing with necessary clamping arrangements for UG cable of 1.1 KV 40mm dia GI pipe etc., complete and as per the directions of the Engineer-in-charge of the work	Mtr
73	Supplying and fixing L.T. cast Iron pot heads suitable for 1.1 KV class UG cable filled with necessary bitumen/insulating compound complete with terminals, clamps, bolts, nuts and washers 16Sqmm etc etc., complete and as per the directions of the Engineer-in-charge of the work	No.
	BESCOM DEPOST AND METER CHARGES = 1889+100+6300=8289.00	
	Total	

CERTIFICATE

1. Certified that the above work done satisfactory and no materials issued from departmentally.

29/04/2016

Previous Measurement		Present Measurement			Total Upto Date		Remarks
Qty.	Cost	Qty.	Rate Rs. P.	Amount	Qty	Cost	
-	-	4	591.00	2364.00	4	2364.00	
-	-	15.00	18.60	279.00	15	279.00	
-	-	8	747.00	5976.00	8	5976.00	
-	-	1	2727.00	2727.00	1	2727.00	
-	-	40.00	150.00	6000.00	40	6000.00	
-	-	40.00	15.00	600.00	40	600.00	
-	-	35.00	85.00	2975.00	35	2975.00	
-	-	4.00	360.00	1440.00	4	1440.00	
-	-	1	300.00	300.00	1	300.00	
		2.00		16578.00	2.00	16578.00	
	0.00			2097618.24		2097618.24	

2038544.56 2097544.68

ಸಹಾಯಕ ಕಾರ್ಯಪಾಲಕ ಅಭಿಯಂತರರು.
ವಿದ್ಯಾರಣ್ಯಪುರ ಉಪ ವಿಭಾಗ
ಯಲಹಂಕ ವಲಯ,
ಬೃ. ಬೆಂ. ಮ. ಪಾ., ಬೆಂಗಳೂರು-97.